

Buffalo

—*Its Flour Milling
Heritage*

HARRY A. BULLIS





"Were American Newcomen to do naught else, our work is well done if we succeed in sharing with America a strengthened inspiration to continue the struggle towards a nobler Civilization—through wider knowledge and understanding of the hopes, ambitions, and deeds of leaders in the past who have upheld Civilization's material progress. As we look backward, let us look forward."

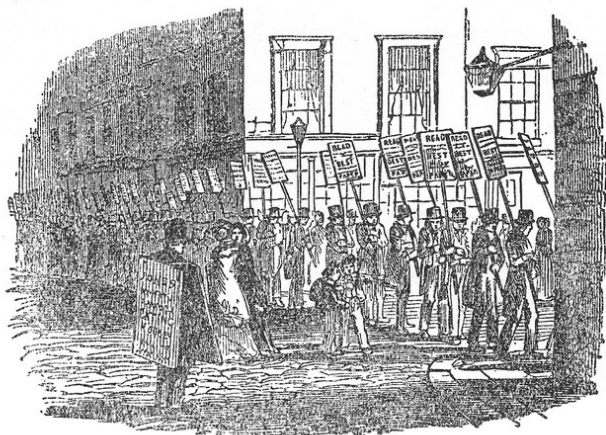
—CHARLES PENROSE
Senior Vice-President for North America
The Newcomen Society of England



This statement, crystallizing a broad purpose of the Society, was first read at the Newcomen Meeting at New York World's Fair on August 5, 1939, when American Newcomen were guests of The British Government

"Actorum Memores simul affectamus Agenda"

BUFFALO—*Its Flour Milling Heritage*



AMERICAN NEWCOMEN, *through the years, has honored numerous American Industries, numerous communities, and the memories of men whose vision and hard work have contributed to both. As a result of these men's efforts the development of America's rich natural resources, of whatever nature, has gone forward! Such a Newcomen manuscript is this dealing with the City of Buffalo and its ever-increasing importance in Flour Milling in the United States of America.*





“This story of Flour Milling begins in early colonial days. The stripling nation that was to become America saw its first mill in Virginia, in 1621; in New Amsterdam, in 1626; and in Boston and in the vicinity of what is now Albany, in 1632. These were early beginnings for any American Industry of today.”

—HARRY A. BULLIS



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—Its Flour Milling Heritage

HARRY A. BULLIS

MEMBER OF THE NEWCOMEN SOCIETY

CHAIRMAN OF THE BOARD

GENERAL MILLS, INC

MINNEAPOLIS



THE NEWCOMEN SOCIETY OF ENGLAND
AMERICAN BRANCH NEW YORK

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HARRY A. BULLIS



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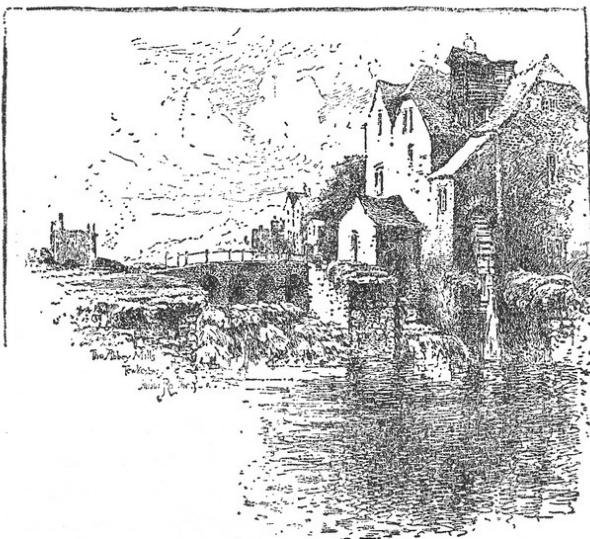


*This Newcomen Address, dealing with the
Flour Milling Industry at Buffalo, was de-
livered at the "1948 Niagara Dinner" of The
Newcomen Society of England, at which Mr.
Bullis was guest of honor, held at the Buffalo
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on May 5, 1948*



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“The first flour milling *center* to develop was New York, formerly New Amsterdam. This continued for about thirty years, until 1690. But the leadership was short lived. Ambitious Philadelphia burgeoned into first place as a flour center by 1750 on the strength of several mills that had been established in its vicinity. Mills at Lancaster, Easton, and at other Pennsylvania towns shipped flour to Philadelphia.”

—HARRY A. BULLIS



Biographical Sketch of The Author



Many seeing these words will have come again to them a long-forgotten image of a venerable grist mill in a quiet countryside. There stands the placid millpond, its grassy banks lined by tall trees. The pond has threefold purpose, and who are we to say which the more important: in Summer's heat, a cherished swimming hole for the young; in Winter's frost, a skating pond for every age; and, economically vital to the small community, always a trusty water-power to drive great grindstones in yonder grist mill. There works the miller, generously dusted white with flour. To that mill came wagon after wagon, loaded heavy with the wheat of the fields—that ripened harvest which, above all, sustains mankind! It is a scene both of beauty and of wholesome industry. Hundreds of these small mills dotted a colonial landscape in early days in America. Landmarks beloved by their farm and village neighbors, they stood as pioneers of what was to become a great industry in the United States of America. That rural image is prophetic of what was to come. Today, our Nation leads the World in the proportions and usefulness of its Flour Milling Industry. During nearly 30 years, HARRY AMOS BULLIS, LL.D., Chairman of the Board, General Mills, Inc., has been identified with Flour Milling in America. Native of Nebraska, graduate of the University of Wisconsin, in the Class of 1917, he studied at the University of London, specializing in economics and business administration. Served as an officer in the United States Army in the A.E.F., during the First World War. Holds his Phi Beta Kappa key. Has written much on finance, economics, and executive management. Takes active part in National Association of Manufacturers, National Industrial Conference Board, as well as in constructive civic and national programs. Is widely known in the Milling Industry, both here and abroad. Industrialist, author, student of economics and of Material History, good citizen, MR. BULLIS is a Vice-Chairman of the Minnesota Committee, in The Newcomen Society of England.



HIS MARK



My fellow members of Newcomen:

IT IS FITTING that I speak tonight in Buffalo, a city that enjoys today as it has for the past 18 years the honor of being *the capital* of flour milling in these United States of America. In its role as the leading flour production and export center of our land, Buffalo serves the Nation and the world. The story of how it attained this enviable, and honored, position is a testimony to the vision and the daring of many men, and to the business dynamics of a free economy. When we examine the chronicle of Buffalo's greatness as a milling center, we find recorded there the climax of an exciting and dramatic contest of men with nature, of the hard-won battle to wrest riches from the soil, and of hopes and fears intermingled with success and, yes, with occasional failure.



All these pages of the past, however, are colored with one dominant characteristic. It is the *desire for service* that burned in the hearts of those who led the industry. It continues today, that conviction of service, as it thrived in the beginning. It more than any

other single factor spurred men to do great things, and to write with deeds and achievement the New World Heritage of Flour Milling that is our legacy today.

This story of an industry begins in early colonial days. The striping nation that was to become America saw its first mill in Virginia, in 1621; in New Amsterdam in 1626; in Boston and in the vicinity of what is now Albany, in 1632. The first grain to be ground was undoubtedly Indian corn, which was native to the country. Before long, wheat was grown and its flour produced as well.

It is interesting that the first flour milling *center* to develop was New York, formerly New Amsterdam. This continued for about thirty years, until 1690. But this leadership was short-lived. Ambitious Philadelphia burgeoned into leadership as a flour center by 1750, on the strength of several mills that had been established in its vicinity. Mills at Lancaster, Easton, and at other Pennsylvania towns shipped flour to Philadelphia. There were also mills on the Wissahickon, a small stream now within the city limits of Philadelphia, and on the Brandywine, south of the city.

The famous work of Oliver Evans, one of the great inventive geniuses of those days, showed itself in the mills on the Brandywine. He contributed to industrial development with conveying machinery and steam engines. It is a coincidence that Evans' early work with the steam engine was based upon knowledge gained from a book describing the Newcomen atmospheric engine. The net result of Evans' work was to decrease the millers' labor bill, and, in a new country with a shortage of skilled labor, this was very important. His book, *The Young Millwright and Millers' Guide*, was long the standard handbook of the trade.

Millers in Baltimore quickly accepted the new machinery to modernize their plants. By 1825, the flour milling capital of America was Baltimore, on the basis of that city's heavily authenticated claims. The Ellicott brothers in 1772 had built two mills about ten miles from the city. The son of one of these Ellicotts, Joseph, a generation later laid out the City of Buffalo. Considerable flour was exported from Baltimore, especially to the West Indies and to South America.

For a time, Richmond, Virginia, pressed Baltimore for leadership in flour production. Rochester, New York, assumed pre-eminence by 1834 as the largest flour manufacturing center in the world. It retained its leadership longer than any of its predecessors, reaching its peak in the late 'seventies. For a few years in the 1850's, Oswego enjoyed a brief period of milling leadership. The march of wheat *went westward* with the winning of the country. At times Cincinnati, St. Louis, New Orleans, Chicago, and Milwaukee figured as challengers to the flour milling laurels held by the East. But as milling centers they soon were overshadowed by Minneapolis.

By 1870, there were 500 mills scattered over southeastern Minnesota with the concentration in the City of Minneapolis. There were two advantages for Minneapolis as a milling center—excellent water power and a growing population. In 1869, Minneapolis had 13 mills producing over 250,000 barrels of flour annually.



About this time the milling industry underwent a revolution. Challenged by the flinty quality of the hard spring wheat available at the time and to find a more efficient way of producing flour for a rapidly increasing population, Minneapolis millers were among the leaders who pioneered new machinery and processes to meet new conditions. The men who carried the torch in these advances were strong characters, undeterred by drought, depression, frosts, and unfavorable freight structures, that seemed to conspire together to obstruct their goals.

Books have been written about the developments that occurred between 1870 and 1890. Briefly, they were, first, the introduction of the middlings purifier and the gradual reduction system, which made it possible to produce, from spring wheat, a superior flour for bread making than made from winter wheat; and secondly, the replacement of the old-fashioned millstones with steel rolls, which increased the capacity of the mills.

Minneapolis millers seized these improvements and combined them with easy access to the vast wheat fields of Minnesota and the Dakotas to elevate the city to the rank of leader in the Nation's flour manufacturing.

In those days it was the policy of the railroads to encourage industries on their lines. They extended transit privileges liberally for milling, wheat storage, flour blending, and flour storage. They often permitted out-of-line hauls without penalty. Milling-in-transit privileges helped build up the Minneapolis industry.



Meanwhile the Great Lakes shipping artery took on new life. Eastern mills found that an increasing proportion of their western wheat came over this route. Farmers of the Genesee Valley had gradually turned from wheat growing to dairying, shutting off that supply. Much of the western wheat was shipped down the Great Lakes to Buffalo.



Buffalo has had an eventful history. Indians, French explorers and soldiers, Jesuit priests, English officers, trappers, fur traders, American pioneers—all played their part in the early days of the Niagara Frontier.

During the French and Indian War, the Revolutionary War, and the War of 1812, the Frontier was the scene of much action. The first permanent white settlers had come shortly after the Revolution. In the 1790's the Holland Land Company acquired a large tract of land in western New York State and hired Joseph Ellicott to survey it. Ellicott selected as a townsite an area on Buffalo Creek, and there, in 1803, he laid out the streets in much the pattern of present-day Buffalo. In present-day Buffalo, Ellicott's name survives in the Ellicott Square Building.

At first, when the settlers on Buffalo Creek needed flour or meal they had to take their grain to Stuart's Mill across the river in Canada, but grist mills began to spring up on the American side soon after 1800.



The first commercial grain elevator in the world was built in Buffalo by Joseph Dart, 106 years ago. It had a capacity of 55,000 bushels. Dart followed the principles laid down by Oliver Evans, applying them to conveying grain from lake boats to canal boats and to storage and using steam for power. The project was so suc-

cessful that the Dart Elevator soon was enlarged, other elevators were built, and, by 1865, Buffalo had 27 elevators, with a total storage capacity of over 6,000,000 bushels.

Today, Buffalo's elevator capacity exceeds 57 *million* bushels, more than a thousand times what it was a little over a hundred years ago. For forty years after the Dart Elevator was built, Buffalo's importance in relation to milling was largely as a *wheat storage* center. After the rise of the spring wheat mills in the Northwest, Buffalo became a *flour storage* center also.

Of course, there had continued to be flour mills in Buffalo from pioneer days on, though by 1899 the number in operation here had dwindled to five—Banner Milling Company; Central Milling Company; Harvey and Henry; Thornton & Chester; and George Urban & Son. Incidentally, the only one of these companies operating today, and that under a slightly different name, is the George Urban Milling Company, though the Thornton & Chester Milling Company still exists as a corporation.



Thornton & Chester built what is said to have been the first mill in Buffalo run by steam. The founders and their descendants continued to operate this company for about 80 years. Only a few months ago George T. Chester, son of one of the founders, died in California at the age of 90.

The firm of George Urban & Son was founded by George Urban, Sr., in 1846, as a flour wholesale business. Later Mr. Urban built a mill at Genesee and Oak Streets, in Buffalo. In 1899, it became the first flour mill in Buffalo to be run by electric power supplied from Niagara Falls. The first George Urban had retired in 1884, being succeeded in the management of the business by George Urban, Jr., who lived until 1928. At that time, his son, George P. Urban, became president of the company, which had been incorporated in 1903, the same year that the present Urban mill was built. He continues at its head today. And with two sons now with him in the business, and a grandson, George P. Urban III, coming up, it would appear that George P. Urban need have no fears about the future of the George Urban Milling Company. Like the Urban family, it is a Buffalo institution.

I wish to take this opportunity to speak of another veteran miller of the vicinity of Buffalo. That is Fred J. Lingham, President of Federal Mills, Inc., of Lockport. Mr. Lingham has spent fifty-five years in the milling industry, forty-one years at Lockport and the last twenty-eight in his present position as president of the company. But he is not just president of one company. He has a long record of service to the industry and to the public. He has served twice as President of the Millers' National Federation, resigning from that position in 1918 to serve under Herbert Hoover in the Food Administration. He was elected again in 1933. He is prominent in civic affairs in his home city, and is living proof of the public spiritedness of the American business man.



At the turn of the century, although Buffalo had several long-established flour mills, there was little to indicate that thirty years later it would be the leading milling center of the world. On the other hand, it was beginning to be evident to some far-sighted individuals that Buffalo had the qualifications for a first-class milling center. William de la Barre, a well-known milling engineer from Minneapolis, visited Buffalo in 1896, supposedly to investigate the possibility of utilizing electric power from Niagara Falls for operating flour mills—a project which George Urban, Jr., carried through a few years later.



About 1901, Frank F. Henry, then Buffalo branch office manager for Washburn Crosby Company, suggested that that company should build a mill in Buffalo to take care of its export and eastern business. He had the vision to realize that Buffalo had access not only to wheat from the western States, but also to wheat from Canada, which was shipped by rail to Port Arthur and Fort William and thence down the lakes. This wheat could be milled in bond for export. Mr. Henry had spent about six years in the employ of the Lehigh Valley Transportation Company, which at that time operated a fleet of lake steamers. In fact, for over a year he had been Assistant General Manager of the lake lines of the Lehigh Valley Company, and thus had thorough understanding of the transportation problems involved.

These so-called package freight lines were owned by the Trunk Line railroads. The general manager of each line would in these days probably be called President, as they were operated and managed almost independently by these men. The Lehigh Valley line of eleven steamers was wholly owned by the Lehigh Valley Railroad; the Union Steamboat Company by the Erie Railroad; the Western Transit Line by the New York Central; the Erie Western Transportation Company (Anchor Line) by the Pennsylvania Railroad; and the Lackawanna Line by the Delaware, Lackawanna & Western Railway. The Northern Steamship Company was owned by the Great Northern Railway, with six freight steamers and two truly magnificent passenger steamers, the *Northwest* and the *Northland*. When, by action of Congress, the railroads had to divest themselves of these water lines, they were purchased by W. J. Conners, who organized them into and operated them under the name of Great Lakes Transit Company. This company operated very successfully until the First World War. Thereafter, changes had occurred that made their operation uneconomical and they finally were disposed of and were never replaced by other operators performing similar services. Lake rates were lower than rail rates, and consequently considerable flour was shipped by lake, but in spite of the care that millers took in packing and loading flour at the mills, if it was shipped by lake it frequently arrived at its destination in poor condition. Some customers were insisting on all-rail shipment, which entailed higher freight rates. Because of this situation, Washburn Crosby was maintaining storage warehouses at Buffalo and at Erie, Pennsylvania, to which it shipped flour from Minneapolis in jute or osnaburg bags—strong, heavy bags to withstand rough handling aboard lake vessels. At the warehouses the flour was repacked in cotton bags for shipment to customers.



In 1901, the railroads withdrew the privilege of flour storage-in-transit without penalty at Buffalo. This action may have influenced the decision of Washburn Crosby Company to build at Buffalo, but it already was apparent to Mr. Henry that if flour millers were to continue to take advantage of the low lake freight

rate they would have to ship the wheat down the lakes and mill it afterward.

In 1900, the old Dakota Elevator, a wooden elevator facing Hatch Slip at Buffalo, had burned, and in 1903, on Mr. Henry's advice, Washburn Crosby Company purchased the site for a flour mill. A 3500-barrel mill was built, and in January 1904, began to operate. *That date* marks the beginning of the revival of milling in Buffalo, and this installation remains today the keystone of the Buffalo milling arch.



In 1904, Buffalo's flour production was more than twice what it had been in 1903, increasing from less than a million barrels to well over two million. In the following twenty years, the Buffalo plant of Washburn Crosby Company, under Mr. Henry's leadership, was repeatedly enlarged, and each increase in capacity brought a corresponding increase in Buffalo's flour production. During this period, the Standard Milling Company, the Buffalo Division of which was known for many years as the Hecker-Jones-Jewell Milling Company, acquired milling property here.

Mr. Henry's foresight and judgment were paying dividends year after year, and in his quiet manner he was achieving the distinction of being the most practical operating executive in the Milling Industry. His capacity for concentrated effort, his mastery of detail, amazed his associates. Buffalo owes more than it will ever realize to this sturdy son of Thomaston, Maine. Because of such men as Frank F. Henry, there will be a strong, vibrant milling industry in Buffalo, shall we say, forever.



Meanwhile other changes had been taking place that lessened the advantages that Minneapolis previously had enjoyed as a milling center and increased the advantages of Buffalo.

One of these was the decrease in the production of hard spring wheat in the northwestern States. Dairying and diversified farming were pushing the wheat fields farther West, as they had done in New York State fifty years earlier. Also, the production of hard

winter wheat was increasing rapidly. The hard winter wheat area today comprises Kansas, Nebraska, Colorado, Oklahoma, and the Panhandle of Texas.

Northwestern mills could not use wheat from the Southwest without a considerable out-of-line haul; whereas Buffalo could draw wheat from all the major wheat-producing sections of this country east of the Rockies as well as from Canada. Buffalo millers thus had a wide selection and could secure the exact grades and varieties of wheat needed for proper mixing.

Being able to draw wheat from Canada was a distinct advantage in milling flour for export. During the last 65 years, except for one four-year period when it was duty-free, Canadian wheat imported into the United States has been subject to a duty ranging from 10¢ to 42¢ a bushel. Since American mills can mill Canadian wheat in bond and ship the flour abroad without paying any duty except on the feed produced and retained in this country, the advantageous position of Buffalo with respect to access to Canadian grain has resulted in centering in this city the milling of spring wheat flour for export.



Ever since 1900 there has been a definite freight advantage in shipping wheat to Buffalo via the Great Lakes, rather than milling it in Minnesota and shipping the flour East either all rail or lake-and-rail. The passage, in 1912 of the Panama Canal Act, which required railroads to sell their interest in lake lines, lessened the competition for lake-and-rail shipments of flour, feed, and other package freight. After 1917, various advances and readjustments in freight rates further increased Buffalo's advantage.

The greatest blow to Minneapolis came in 1920, when the railroads withdrew almost all milling-in-transit privileges from that city. This greatly reduced the area from which Minneapolis could draw wheat without a considerable freight penalty. Later, most of these privileges were restored, in the form of proportional rates, but the temporary withdrawal was a factor in shifting milling from Minneapolis to Buffalo. In the decade of the 1920's, four other northwestern milling companies acquired mills in Buffalo—Pillsbury, Russell-Miller, Commander-Larabee, and International.

By 1930, Buffalo's daily milling capacity had increased to over 40,000 barrels. It was in this year that Buffalo's flour output for the first time exceeded that of Minneapolis; and it has remained in the lead ever since. No large companies have moved to Buffalo in the last 18 years, but the mills already there have added to their facilities, until now they are capable of producing over 51,000 barrels a day—or, since we now measure flour in hundred-pound sacks instead of 196-lb. barrels, 100,000 hundredweight.

The annual receipts of wheat at the Port of Buffalo received by lake in the decade before the Second World War averaged over 80,000,000 bushels. During the war, they increased sharply, reaching a peak of 187,000,000 bushels, in 1945. This includes Canadian as well as United States wheat. During this period the flour mills of Buffalo were the shippers, receivers, and converters of 50,000,000 bushels of such wheat annually. In addition to this, large commercial feed plants were established here, and their later growth was to a large degree made possible by the location of wheat flour mills here to supply them with their required mill feeds, their average annual consumption of which was around 450,000 tons.

But while Buffalo is the undisputed leader among flour-producing centers of the United States, it is far from having a monopoly. Milling is still very widely distributed. The list of mills issued this spring by the *Northwestern Miller* shows one or more mills in every State of the Union except Rhode Island and Vermont—a total of 2,160 mills, with a combined daily capacity of 1,334,000 hundredweight of flour. So Buffalo has less than *one-thirteenth* of the total capacity of the flour milling industry. In 1946, it produced nearly *one-tenth* of the country's total flour output.



Of the 2,160 flour mills in this country, the majority are small; in fact 80 percent have capacities of less than 500 sacks a day, and the average for the United States as a whole is only 617 hundredweight. But there are 57 mills each of which is capable of producing 5,000 hundredweight or more of flour a day, and 13 with capacities of 10,000 hundredweight or over. Four of these last are in Buffalo.

Mills are most numerous in older States with good water power. The States having the largest number of mills are: Virginia with 234; Pennsylvania with 223; and North Carolina with 171. But these three States with their 628 mills have a smaller milling capacity than Buffalo with its seven mills, and, in 1946, they actually produced less than a third as much flour.



In 1930, when Buffalo first took the lead in flour production with 24 million hundredweight, Minneapolis stood second with 21 million, and Kansas City third with 15 million. Since 1936, Kansas City and Minneapolis have stood fairly even, with Minneapolis leading for five years and Kansas City for seven.

Kansas and Minnesota both exceed New York State in milling capacity and in flour output, because both have a considerable number of good-sized mills besides those at the milling centers. (Incidentally, the milling center of Kansas City includes both Kansas City, Missouri, and Kansas City, Kansas.)



At present, there seem to be two contradictory forces affecting the milling industry—the sources of raw materials, which attract the mills westward; and the markets in the East, which in conjunction with lake transportation attract the mills eastward. There is another factor also—the western movement of population, particularly the increased population on the Pacific Coast. Between 1940 and 1947, population in Washington, Oregon, and California increased nearly 40 percent as compared with about 9 percent for the United States as a whole. It seems not unreasonable to expect a diversion of mill capacity in that part of the country from flour for export to flour for domestic use, in order to provide bread for the increased population. This diversion will aid Buffalo, which, like the Pacific Northwest, has for many years enjoyed a large share of the flour export trade. In fact, Buffalo milling capacity is so large that it must always have export volume to remain economically operative.

So we see that the flour milling industry in the United States, like other industries in a free economy, is not static, but is free to move and change and adapt to changing conditions. There is every indication that Buffalo will maintain its world leadership in flour production for many years to come.

The Buffalo area, consisting of Erie and Niagara Counties, is the world's greatest producer of electrical energy. Within five hundred miles of the city live over half of the population of the United States and two-thirds of the population of Canada. With its great power resources—resources which are not lessened by use—, with one of the world's greatest markets at its door, and with splendid facilities for transportation by land, water, and air, Buffalo has all the material factors needed to become one of the three or four greatest manufacturing areas in the entire New World.



The power of Niagara brought the product of the prairie to Buffalo. But deeper than physical power lies the power of the human will, human intelligence, human courage. I am confident that the men who in the last fifty years have made Buffalo the premier flour milling center of the world have developed a reservoir of talent that will move forward to new goals and achievement in the future. The city's milling industry flourishes today on the heritage of vision, courage, and great deeds accumulated by the strong men of the past. The will to better service was their guiding light. That will, and that same indomitable courage and foresight, I am happy to say, is an outstanding trait of Buffalo millers today.

THE END

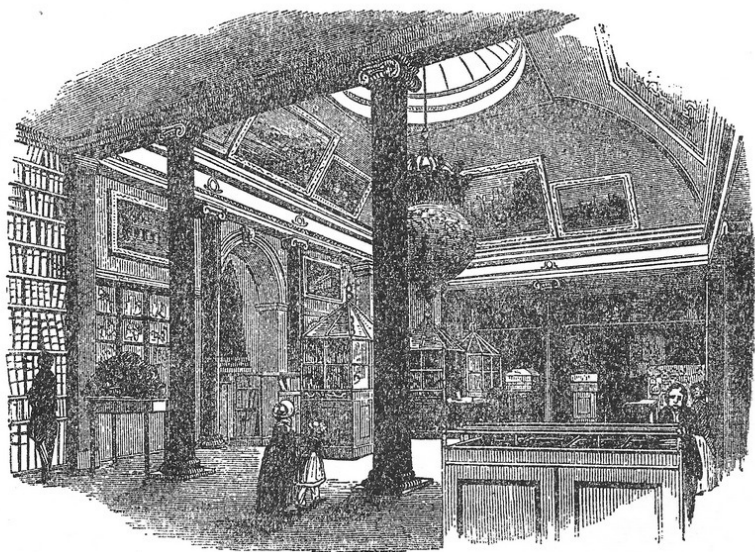


*"Actorum Memores simul
affectamus Agenda!"*



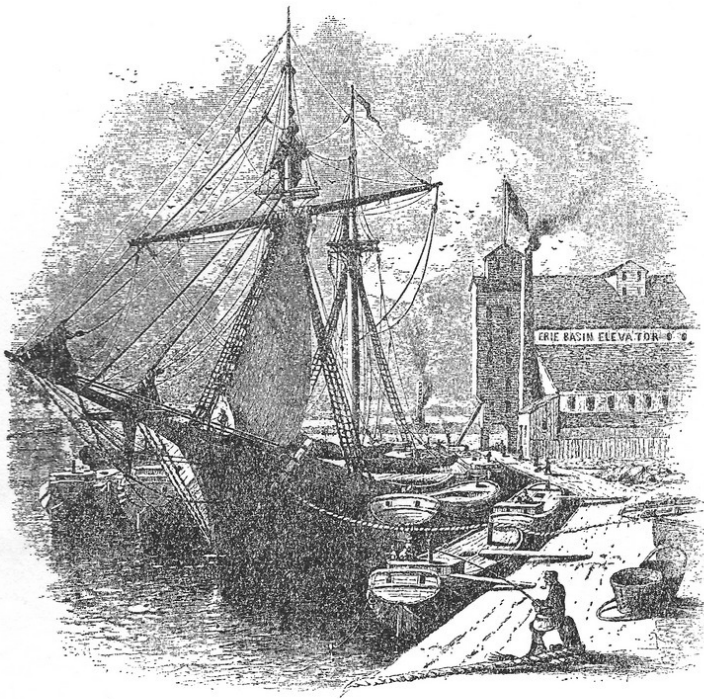
THIS NEWCOMEN ADDRESS, *dealing with the growth of the Flour Milling Industry in America and the position of the City of Buffalo as a center in that industry*, was delivered at the "1948 Niagara Dinner" of The Newcomen Society of England, held at Buffalo Club, in Buffalo, N.Y., U.S.A., on May 5, 1948, at which MR. BULLIS, the guest of honor, was introduced by LEWIS G. HARRIMAN, President, The Manufacturers & Traders Trust Company of Buffalo; Vice-Chairman of the Niagara Committee, in American Newcomen. The dinner was presided over by THE VERY REV. EDWARD RANDOLPH WELLES, Dean of St. Paul's Episcopal Cathedral, Buffalo; the Chairman of the Niagara Committee, in The Newcomen Society of England.





FRANK F. HENRY of Buffalo, member of the board of directors of General Mills, Inc. and to whom a tribute is paid in this Newcomen manuscript, attended the "1948 Niagara Dinner" at Buffalo at which Mr. Bullis was guest of honor. Mr. Henry is a member of the
Niagara Committee, in The Newcomen Society
of England.

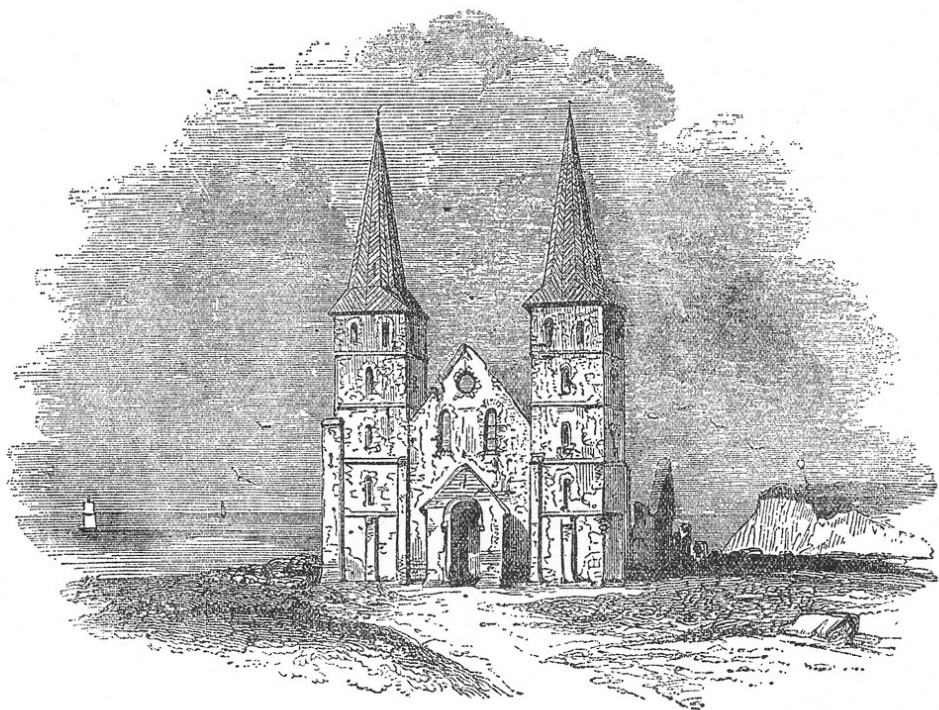




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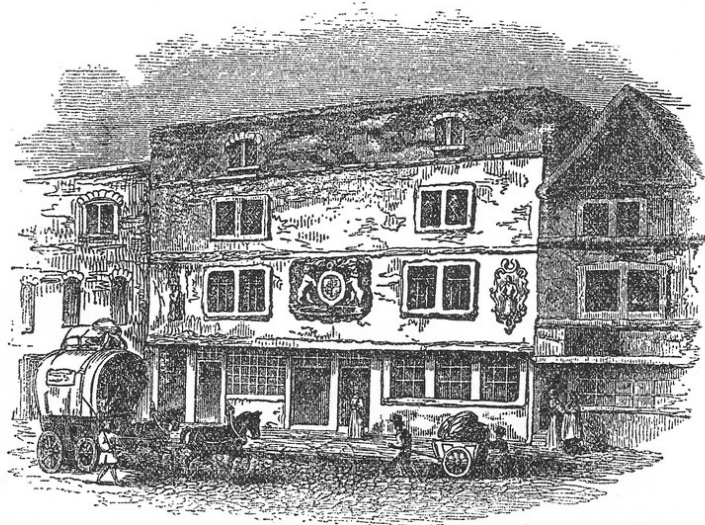




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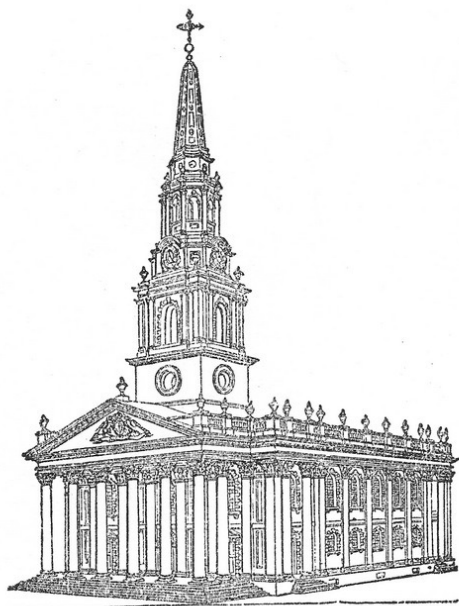




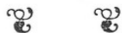
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—HARRY A. BULLIS





AMERICAN NEWCOMEN *takes satisfaction in this clear-cut Newcomen manuscript which pays gracious tribute to the Flour Milling Industry and to the City of Buffalo. The entire world has profited by the extraordinary industrial production, and constantly progressive improvement and refinement, of this great American effort to aid in feeding the manifold Peoples of the Earth!*





THE NEWCOMEN SOCIETY OF ENGLAND IN NORTH AMERICA

BROADLY, this British Society has as its purposes: to increase an appreciation of American-British traditions and ideals in the Arts and Sciences, especially in that bond of sympathy for the cultural and spiritual forces which are common to the two countries; and, secondly, to serve as another link in the intimately friendly relations existing between Great Britain and the United States of America.

The Newcomen Society centers its work in the history of Material Civilization, the history of: Industry, Invention, Engineering, Transportation, the Utilities, Communication, Mining, Agriculture, Finance, Banking, Economics, Education, and the Law—these and correlated historical fields. In short, the background of those factors which have contributed or are contributing to the progress of Mankind.

The best of British traditions, British scholarship, and British ideals stand back of this honorary society, whose headquarters are at London. Its name perpetuates the life and work of Thomas Newcomen (1663-1729), the British pioneer, whose valuable contributions in improvements to the newly invented Steam Engine brought him lasting fame in the field of the Mechanic Arts. The Newcomen Engines, whose period of use was from 1712 to 1775, paved a way for the Industrial Revolution. Newcomen's inventive genius preceded by more than 50 years the brilliant work in Steam by the world-famous James Watt.



*"The roads you travel so briskly
lead out of dim antiquity,
and you study the past chiefly because
of its bearing on the living present
and its promise for the future."*

—LIEUTENANT GENERAL JAMES G. HARBORD,
K.C.M.G., D.S.M., LL.D., U.S. ARMY (RET.)

(1866-1947)

*Late American Member of Council at London
The Newcomen Society of England*



NOTE

HARRY AMOS BULLIS DIED IN 1963.

EDITOR

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ELMA, NY USA